

THREE NEW SPECIES OF THE GENUS CLUBIONA FROM XIZANG AND SICHUAN, CHINA (ARANEAE, CLUBIONIDAE)

ZHANG Feng, ZHU Ming-Sheng

College of Life Sciences, Hebei University, Baoding 071002, China

Abstract The present paper deals with three new species of the genus *Clubiona* from Xizang and Sichuan Province, China, belonging to the family Clubionidae. They are proposed to name as: *Clubiona bomiensis* sp. nov., *Clubiona cordata* sp. nov. and *Clubiona dactyla* sp. nov. Types are deposited in the College of Life Sciences, Hebei University.

Key words Araneae, Clubionidae, *Clubiona*, new species, China.

On examining the spider collection from Xizang Autonomy Region and Sichuan Province we came across three species of the genus *Clubiona* which are considered new to science. The three species are proposed to name as: *Clubiona bomiensis* sp. nov., *Clubiona cordata* sp. nov. and *Clubiona dactyla* sp. nov. Type specimens are deposited in the College of Life Sciences, Hebei University. All measurements given are in millimeters. The diagnosis and description of the species are described and illustrated below.

Clubiona bomiensis sp. nov. (Figs. 1-6)

Type material. Holotype male, paratypes 6 female, China, Xizang Autonomy Region, Bomi County (29.53°N, 95.45°E), 13 Aug. 2002, ZHU Ming-Sheng and ZHANG Feng leg.

Diagnosis. This new species resembles *Clubiona taiwanica* Ono (1994: 75, f. 6-9), but differs from the latter by: 1) epigynum with the anterior atrium, while the latter with the median atrium; 2) the anterior spermathecae distinctly smaller than the posterior spermathecae, which contrary to the latter; 3) the dorsal apophysis of tibia spine-shaped, while the latter thumb-shaped; 4) the embolus spine-shaped, while the latter board-shaped.

Etymology. The species name is a noun in apposition, derived from the type locality.

Description. Holotype male, total length 5.31. Cephalothorax 2.61 long, 1.80 wide; abdomen 2.70 long, 1.35 wide. Carapace oval in dorsal view, light yellow, with erect thin dark setae on the front ridge. Cephalic area slightly elevated. Thoracic groove long and thin, longitudinal. AER slightly recurved, PER slightly wider than AER and procurved when seen from above. AME circular, dark, other eyes light; bases of eyes black. Distance AME-AME 0.08, AME-ALE 0.05, PME-PME 0.21, PME-PLE 0.18. MOA 0.36 long, front width 0.31, back width 0.47. Chelicera yellow

brown, with small lateral condyle, promargin with 3 teeth, retromargina with 2 teeth. Endites light yellow, outside edge with notch. Labium light yellow, longer than wide, top with dark hairs. Sternum oval, light brown, with many thin hairs on it. Legs light brown, thin and long. Trochanters and with shallowly notched. Metatarsi, with four line of dense scopulae. Tarsi with two claws and hidden in a dense claw tuft. Leg measurements: 4.05 (1.26 + 1.44 + 0.81 + 0.54); 6.31 (1.80 + 2.48 + 1.26 + 0.77); 5.40 (1.62 + 1.80 + 1.35 + 0.63); 7.92 (2.25 + 2.52 + 2.34 + 0.81). Leg formula: 4231. Abdomen oval in dorsal view, with conspicuous anterior tufts of hairs, dorsum with grey thin hairs and one pair of muscle impression, venter light yellow, with four line of grey longitudinal bands. Six spinnerets, light yellow. Tibia of palp short and thin, with two apophyses, dorsal apophysis long, strongly sclerous and spine-shaped, lateral apophysis short and wide, the tip with two small processes from the ventral view. Embolus originating from prolateral tegulum, spine-shaped, and extending towards tip of cymbium. Conductor very small and membranous, hardly to seen from ventral view. Tegulum expanding slightly, sperm duct brokenly seen from ventral view.

Paratype females: total length of 5.49-5.56. A specimen of 5.49: cephalothorax 2.61 long, 1.98 wide; abdomen 2.88 long, 1.71 wide. AER slightly recurved, PER slightly wider than AER and procurved when seen from above; distance AME-AME 0.13, AME-ALE 0.07, PME-PME 0.26, PME-PLE 0.18. MOA 0.34 long, front width 0.34, back width 0.52. Leg measurements: 5.41 (1.58 + 2.16 + 1.04 + 0.63); 5.76 (1.71 + 2.34 + 1.08 + 0.63); 5.22 (1.53 + 1.80 + 1.26 + 0.63); 7.74 (2.16 + 2.61 + 2.16 + 0.81). Leg formula: 4213. Markings as in male. Atrium of epigynum anteriorly, the

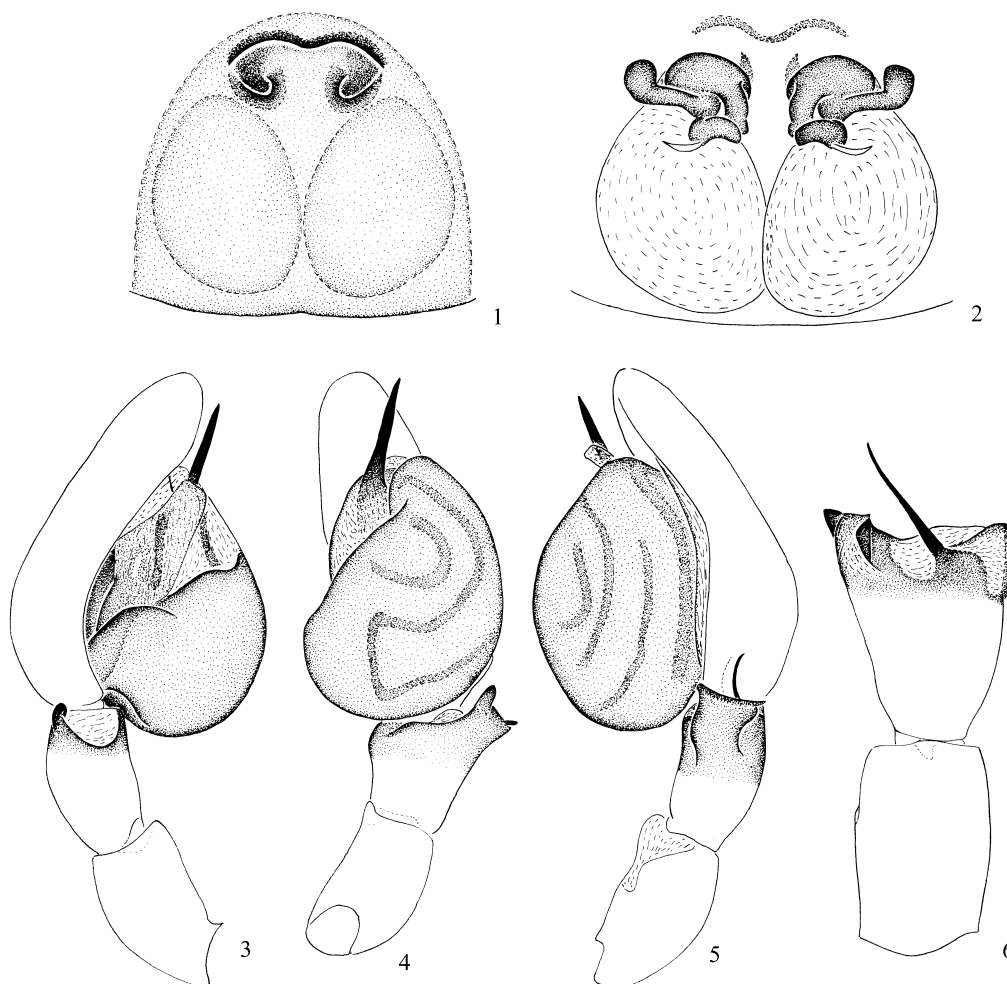
This study was supported by the National Natural Sciences Foundation of China (30499340), partly by the Foundation of Zoology in Hebei University, Key Discipline of Hebei Province (2009025).

Received 20 Dec. 2008, accepted 20 Aug. 2009.

anterior margin of atrium almost arc-like, copulatory openings distinct, hidden in lateral margin of atrium. Copulatory tubes short and wide, extending towards spermathecae. Spermathecae composed of two parts, the

anterior part obviously tube-shaped, and posterior part oval-shaped, semitransparent.

Distribution. Presently known only from the type locality.



Figs. 1-6. *Clubiona boniensi* sp. nov. 1. Epigynum, ventral view. 2. Same, dorsal view. 3. Left palpal organ of male, prolateral view. 4. Same, ventral view. 5. Same, retrolateral view. 6. Tibial retrolateral apophysis, dorsal view.

Clubiona cordata sp. nov. (Figs. 7-11)

Holotype male, paratypes 2 female, China, Sichuan Province, Baoxing County, Fengtongzhai Natural Reserve, 22 July 2003, ZHANG Jun-Xia leg. Paratypes 5 female, Xizang Autonomous Region, Zayu County, 11 Aug. 2002, ZHU Ming-Sheng and ZHANG Feng leg; 1 female, Sichuan Province, Kangding County, 16 July 2002, ZHU Ming-Sheng and ZHANG Feng leg.

Diagnosis. This new species resembles *Clubiona altissimus* Hu, 2001, but differs from the latter by: 1) the atrium of epigynum cordiform; 2) the median septum of atrium small and indistinct, while that of the latter big and distinct.

Etymology. The specific name is due to the shape of atrium of epigynum.

Description. Holotype male: total length 6.93. Cephalothorax 3.24 long, 2.16 wide; abdomen 3.69 long, 1.80 wide. Carapace oval in dorsal view, light

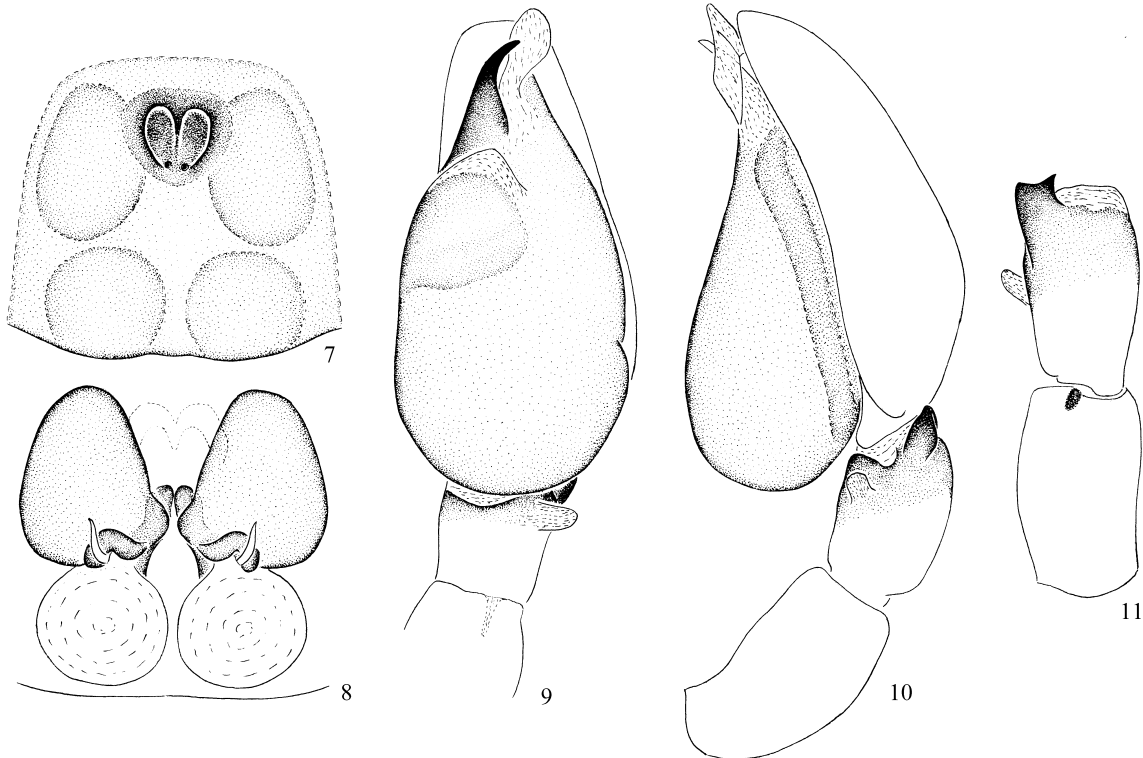
brown, with erect thin grey setae on the front ridge. Thoracic groove thin and longitudinal. AER slightly recurved, PER slightly wider than AER and procurved when seen from above. AME circular, dark, other eyes light; bases of eyes black. Distance AME-AME 0.10, AME-ALE 0.09, PME-PME 0.31, PME-PLA 0.25. MOA 0.33 long, front width 0.43, back width 0.60. Chelicera brown, with small lateral condyle, promargin with 3 teeth, retromargina with 2 teeth. Endites light brown, outside edge with notch. Labium light brown, longer than wide, top with dark hairs. Sternum oval, light brown, with many thin hairs on it. Legs light yellow, thin and long. Trochanters and shallowly notched. Metatarsi and tarsi, with four line of dense scopulae. Tarsi with two claws and hidden in a dense claw tuft. Leg measurements: 9.09 (2.34 + 3.69 + 1.98 + 1.08); 11.03 (2.97 + 4.50 + 2.43 + 1.13); 7.70 (2.16 + 2.70 + 2.03 +

0.81); 10.08 (2.70 + 3.42 + 2.97 + 0.99). Leg formula: 2 413. Abdomen oval in dorsal view, with conspicuous anterior tufts of hairs, dorsum with dense grey hairs and two pairs of muscle impression, and with six or seven chevron bands at hinder part; venter light yellow, with three line of grey longitudinal bands. Tibia of palp short, with two apophyses, dorsal apophysis short, top with median notch when seen from the dorsal view; lateral apophysis membranous, with blunt tip. Embolus originating from prolateral tegulum, short and beak-shaped, and extending retrolaterally. Conductor big and membranous when seen from ventral view. Tegulum expanding slightly, spermduct indistinct.

Paratype females: total length of 6.65-8.77. A specimen of 6.93: cephalothorax 3.15 long, 2.39 wide; abdomen 3.78 long, 2.25 wide. AER slightly recurved,

PER slightly wider than AER and procurved when seen from above. Distance AME-AME 0.13, AME-ALE 0.12, PME-PME 0.39, PME-PLE 0.26. MOA 0.46 long, front width 0.44, back width 0.65. Leg measurements: 7.74 (2.07 + 3.15 + 1.53 + 0.99); 8.15 (2.07 + 3.38 + 1.71 + 0.99); 7.38 (2.16 + 2.61 + 1.80 + 0.81); 9.90 (2.70 + 3.42 + 2.79 + 0.99). Leg formula: 4 213. Markings as in male. Atrium of epigynum anteriorly and cordiform, copulatory openings distinct. Copulatory tubes short, extending towards spermathecae. Spermathecae composed of two parts, the anterior part obviously triangular, and posterior part ball-shaped, semitransparent.

Distribution. Sichuan, Xizang.



Figs. 7-11. *Clubiona cordata* sp. nov. 7. Epigynum, ventral view. 8. Same, dorsal view. 9. Left palpal organ of male, ventral view. 10. Same, retrolateral view. 11. Tibial retrolateral apophysis, dorsal view.

Clubiona dactyla sp. nov. (Figs. 12-14)

Type material. Holotype male, China, Xizang Autonomous Region, Mainling County, 19 Aug. 2002, ZHU Ming-Sheng and ZHANG Jun-Xia leg.

Diagnosis. This new species resembles *Clubiona lamina* Zhang, Zhu et Song, but differs from the latter by: 1) dorsal tibial apophysis of palp smaller, with sharp tip seen from the retrolateral view; 2) lateral tibial apophysis wider and thumb-like; 3) embolus thinner, with sharp tip.

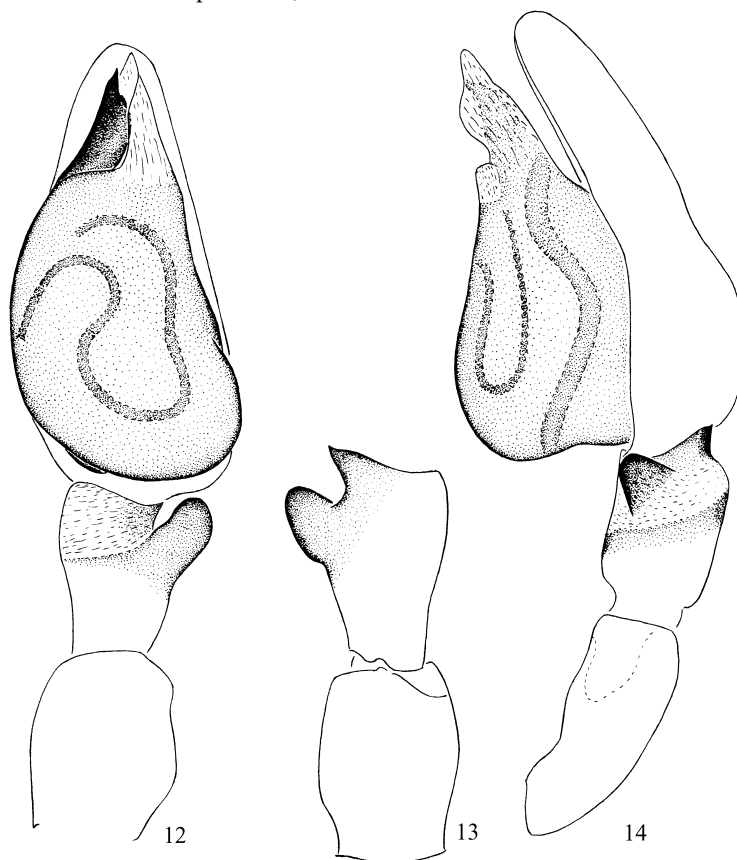
Etymology. The specific name is due to the shape of ventral tibial apophysis of palp.

Description. Holotype male: total length 5.94. Cephalothorax 2.70 long, 1.89 wide; abdomen 3.24 long, 1.71 wide. Carapace oval in dorsal view, light yellow, with dense grey setae. Thoracic groove long and thin, longitudinal. AER slightly recurved, PER slightly wider than AER and procurved when seen from above. AME-AME 0.130.02, AME-ALE 0.080.01, PME-PME 0.26, PME-PLE 0.17. MOA 0.42 long, front width 0.35, back width 0.49. Chelicera yellow, with small lateral condyle and long fang, promargin with 3 teeth, retromargina with 2 teeth. Endites light brown, with dense scopula on the anterior margin. Labium light brown, longer than wide, top with dark hairs. Sternum

oval, light brown, with many thin hairs on it. Legs light yellow, thin and long. Trochanters and shallowly notched. Metatarsi and tarsi, with four line of dense scopula. Tarsi with two claws and hidden in a dense claw tuft. Leg measurements: 7.70 (2.16 + 2.93 + 1.62 + 0.99); 7.79 (2.16 + 2.97 + 1.67 + 0.99); 6.63 (1.94 + 2.25 + 1.76 + 0.68); 8.82 (2.16 + 3.15 + 2.70 + 0.81). Leg formula: 4213. Abdomen oval in dorsal view, brown, with conspicuous anterior tufts of hairs, dorsum with dense grey thin hairs and two pairs of muscle impression, and

with six or seven chevron bands at the hinder part; venter light yellow. Tibia of palp short, with two apophyses, dorsal apophysis triangular, with sharp tip; lateral apophysis wider and membranous, with blunt tip and thumb-like. Embolus originating from prolateral tegulum, board-shaped. Conductor membranous and extending from tegulum. Tegulum expanding slightly, spermduct distinct.

Distribution. Presently known only from the type locality.



Figs. 12-14. *Clubiona dactyla* sp. nov. 12. Left palpal organ of male, ventral view. 13. Same, retrolateral view. 14. Tibial retrolateral apophysis, dorsal view.

REFERENCES

- Hu J-L 2001. Spiders in Qinghai-Tibet Plateau of China. Henan Science and Technology Publishing House, Zhengzhou. 658 pp.
- Hu J-L and Li A-H 1987. The spiders collected from the fields and the forests of Xizang Autonomous Region, China. (). Agricultural Insects, Spiders, Plant Diseases and Weeds of Xizang, 2: 247-353.
- Mikhailov, K. G. 1995. Erection of infrageneric groupings within the spider genus *Clubiona* Latreille, 1804 (Aranei: Clubionidae): a typological approach. Arthropoda Selecta, 4 (2): 33-48.
- Mikhailov, K. G. 2002. The spider genus *Clubiona* Latreille, 1804 (Aranei: Clubionidae) in the fauna of the former USSR: 2003 update. Arthropoda Selecta, 11: 283-317.
- Platnick, N. I. 2009. The World Spider Catalog, Version 9.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/81-87/index.html>.
- Song, D-X, Zhu, M-S and Chen, J 1999. The Spiders of China. Hebei Science and Technology Publishing House, Shijiazhuang. 640pp.
- Zhang, F, Zhu, M-S and Song, D-X 2003. Two new species of the genus *Clubiona* from China (Araneae: Clubionidae). Acta Zootaxonomica Sinica, 28 (4): 634-636. [动物分类学报]
- Zhang, Y-J and Yin, C-M 1998. Six new species of the genus *Clubiona* from China (Araneae: Clubionidae). Acta Zootaxonomica Sinica, 23 (1): 9-17. [动物分类学报]

西藏和四川省管巢蛛属三新种记述（蜘蛛目，管巢蛛科）

张 锋 朱明生
河北大学生命科学学院 保定 071002

摘 要 在进行中国管巢蛛科系统学研究时，发现了产自西藏和四川的管巢蛛属 3 新种：波密管巢蛛 *Clubiona bomiensis* sp. nov.，心形管巢蛛 *Clubiona cordata* sp. nov. 和指管巢蛛 *Clubiona dactyla* sp. nov.。这 3 新种均属于管巢蛛属的拟管巢蛛种组（group *paradubiona*）。所有标本均保存在河北大学生命科学学院。文中测量单位为 mm。

波密管巢蛛，新种 *Clubiona bomiensis* sp. nov.（图 1~6）
新种与台湾管巢蛛 *Clubiona taiwanica* Ono 相似，但具有以下不同：1) 外雌器腔窝前位，而后者中窝中位；2) 第 1 纳精囊明显小于第 2 纳精囊；3) 胫节的背突刺形，而后者背突的拇指形；4) 插入器刺形，而後者的插入器板状。
正模 ，副模 6 ，西藏波密县，2002-08-13，朱明生、张锋采。
词源：新种以模式标本的产地而命名。

心形管巢蛛，新种 *Clubiona cordata* sp. nov.（图 7~11）
新种与高原管巢蛛 *Clubiona altissimus* Hu 相似，但具有以

关键词 蜘蛛目，管巢蛛科，管巢蛛属，新种，中国。
中图分类号 Q959. 226

下不同：1) 本种外雌器腔窝心形；2) 外雌器腔窝的中隔小而明显，而後者的中隔大而明显。
正模 ，副模 2 ，四川省宝兴县蜂桶寨自然保护区，2003-07-22，张俊霞采；副模 1 ，四川康定县，2000-07-16，朱明生、张锋采；副模 5 ，西藏察隅县，2002-08-11，朱明生、张锋采。
词源：新种以外雌器腔窝的形状而命名。
指管巢蛛，新种 *Clubiona dactyla* sp. nov.（图 12~14）
新种与板管巢蛛 *Clubiona lamina* Zhang, Zhu et Song 相似，但具有以下不同：1) 胫节的背突小，从外侧面看具有尖的端部；2) 胫节的外侧突宽大拇指状；3) 插入器细而端部尖。
正模 ，西藏米林县，2002-08-19，朱明生、张俊霞采。
词源：新种以触肢胫节外侧突形状而命名。